Amendments to the Specification

Please add the following paragraph on page 24 between lines 12 and 14:

The remote console redirection module 500 may include a video encoder 502 and an IRC register 504. The video encoder may replicate video data for out-of-band communication with one of the client computers. Similarly, the IRC register 504 may replicate text changes, such as keystrokes, and communicate those text changes out-of-band to the one of the client computers.

Please replace the third paragraph on page 24 (lines 14-21) with the following:

FIG. 3 is a schematic diagram of an exemplary embodiment of JTAG master 404 as deployed in the managed server 20 (FIG. 1). In the disclosed embodiment, the JTAG master 404 is a functional block of the remote management controller 200. The JTAG interface 406 is connected to an integrated circuit 600, which may be connected to a plurality of additional JTAG-compatible integrated circuits to form a JTAG scan chain. The JTAG interface 406 comprises the following four signals: TCLK, TMS, TDO and TDI. The exemplary embodiment also includes a test reset (TRST) ~~TRST#~~ signal 407, which resets the internal state machine of each device in the JTAG scan chain.

Please replace the first full paragraph on page 27 (lines 5-11) with the following:

In addition to the four signals identified in Table 1, the JTAG standard recognizes several optional signals, such as TRST ~~TRST# (Test Reset)~~ and a variety of enable

signals, which may be implemented in devices from various manufacturers. In addition

to the signals set forth in Table 1, the TRST ~~TRST#~~ signal is implemented in the

exemplary embodiment of the JTAG interface 406. Those of ordinary skill in the art will

appreciate that additional optional signals may have to be implemented to allow

communication with the devices of some manufacturers, depending on which functions

have been implemented in the device.

Please replace the first paragraph on page 25 (lines 1-7) with the following:

Those of ordinary skill in the field will appreciate that discussions of the operation

of TDI and TDO will depend on the position of the device in the scan chain. For

example, in a scan chain with only one slave device, the TDO signal from the JTAG

master 404 ~~406~~ is connected to the TDI pin of the device in the scan chain and vice versa.

Connections for configurations may be determined on a case by case basis and are not a

crucial aspect of the present invention. For purposes of simplicity, the following

discussion refers to the perspective of the device being communicated with by the JTAG

master 404 ~~406~~ unless otherwise stated.

Please replace the second paragraph on page 31 (lines 8-13) with the following:

In the exemplary embodiment, the IOP 302 (FIG. 2) obtains description

information by requesting it from the managed server 20 (FIG. 1). Alternatively, the

managed server 20 (FIG. 1) can push the information to the IOP 302 (FIG. 2) early in its

operation. As another alternative, the JTAG master 404 ~~406~~ may obtain a device code for

the managed server 20 from one of the constituent devices in the scan chain. That device

code may be used to identify and obtain data about other devices in the scan chain from

an external source.

Please replace the first paragraph on page 33 (lines 1-11) with the following:

Some applications of the embodiment require dynamic generation of JTAG scan

commands. An example of such an application is remote debugging of a complex device

such as a microprocessor using the JTAG master 404 ~~controller 406~~ to perform

embedded ICE functionality. The IOP 302 may be programmed with firmware that

allows it to create ICE commands in response to user input from a remote management

console. For example, the remote user may send commands indicating an action for the

device being debugged to perform. Those of ordinary skill in the art will appreciate that

the JTAG master 404 ~~406~~ may be employed by a user to remotely perform any function

that could otherwise be performed using a local ICE interface. Those functions ~~function~~

include halting a microprocessor, restarting the microprocessor, displaying or modifying

internal registers inside the microprocessor, issuing bus commands (for example, to read

and write to system memory), setting breakpoints and the like

Please replace the second paragraph on page 33 (lines 13-20) with the following:

The IOP firmware may be programmed to translate those commands into ICE

commands communicated through the JTAG master 404 ~~406~~. This methodology may be

used to gain access to information from devices that do not have JTAG functionality if

those devices are connected to JTAG devices in the scan chain. For example, a user

could request the microprocessor of the managed server to issue a read or write command

to a directly or indirectly coupled device, such as system memory. This capability greatly

enhances the capabilities of the remote server management controller and does so in a

manner that is independent of the OS of the managed server.

Please replace the last paragraph on page 39 (page 39, line 20 – page 40, line 6) with the

following:

Example 6: Commanding Devices While Managed Server is Online.

The JTAG master 404 controller 406 gives a user the capability to command and

control devices in the managed server even while the managed server is online. The

JTAG controller may be used to issue requests through devices in the scan chain. These

requests may be queued and executed along with requests made as part of the normal

operation of the managed server. This capability allows the user to test the operational

communication paths between various devices in the managed server without taking the

managed server offline or placing it in a test mode. Communication paths that may not

otherwise be subject to regular testing may be tested periodically using this methodology.